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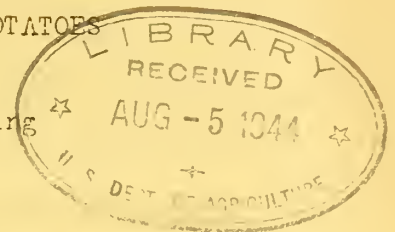
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ACE-170

INFORMATION SHEET ON DEHYDRATED WHITE OR IRISH POTATOES

The Dehydration Committee
Bureau of Agricultural Chemistry and Engineering
U. S. Department of Agriculture



FORM:

Potatoes are dehydrated in the form of slices (Lyonnaise), cubes (scalloped), strips (French fried), and riced (mashed). Prior to drying, the first three types are partially cooked or "blanched." It is necessary that they be rehydrated by soaking in water before using. After rehydration, the potatoes can be cooked in the same way as are fresh potatoes, somewhat less cooking time being required. The riced type is practically completely cooked and needs only a short soaking in hot water before use.

The dehydrated products must be prepared under modern sanitary conditions, in accordance with best commercial practice and Federal and State Pure Food Laws and Regulations.

VARIETIES:

Preference is given to varieties that are mealy after cooking by boiling. Potatoes that are dark colored or soggy after cooking should not be used. The Idaho Russet types are satisfactory. Oregon Gems, Klamath Russets and Burbanks are also good. Satisfactory products have been made from Irish Cobbler, Early Ohio, Chippewa and Bliss Triumph varieties.

It is not possible to state definitely that any variety will or will not be satisfactory when grown under varying conditions. Any type or variety which meets the above conditions may be used for dehydration.

PREPARATION:

Only clean sound potatoes should be used for dehydration. The potatoes must be thoroughly washed so that all dirt is removed. When abrasive peelers are used, tubers should be sized, otherwise excessive losses may ensue. Irregular shapes should be avoided, if wastage is to be kept to a minimum. All potatoes darken to some extent after peeling; some varieties darken rapidly, others slowly, and some may turn red. These discolorations can be prevented by immediately placing the peeled tubers in cold running water or in a dilute salt solution (1 to 2%). After peeling, the eyes and any discolored spots must be trimmed out. Any spots left will show up in the rehydrated material and may result in rejection of the whole lot. Care in peeling and trimming will cut down the wastage to no small degree.

The potatoes should be cut as follows: slices, from 3/16" to 4/16" thick; cubes, from 3/16" to 6/16" on a side; strips, not less than 3/4" in length and in cross-section, not less than 3/16" and not

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more than 6/16". Preferably the cut potatoes should be placed directly on the trays or belt on which they are to be blanched. Immediately after cutting the pieces should be washed thoroughly by strong sprays of cold clean water in order to remove starch from the cut surfaces. If not blanched immediately the cut material must be kept under running cold water or in a clean 1 to 2% salt solution. In no case shall the material be so held for more than one hour.

PEELING AND TRIMMING LOSS:

Waste will run from 17 to 25%.

BLANCHING:

The pieces are blanched in flowing steam at not less than 190° F. until translucent, usually about 3 minutes. Care must be taken that the steam reaches all pieces; in order to prevent "case-hardening." Case-hardening is a condition which develops when dehydration is attempted at too high a temperature and too low relative humidity. It consists of the formation of a horny shell which slows up both dehydration and rehydration. Water blanching or "series" blanching in water results in greater vitamin losses than where steam is used.

TRAYING:

There should be a minimum of overlapping on the drying surface. If, however, the slicing and spraying have been carefully done, trouble from sticking will not be too great. Too heavy loading will increase the drying time. Strips are usually loaded 1-1/4 lbs. to the square foot; slices 3/4 to 1 lb.; dice up to 1 to 1-1/4 lbs.

DRYING TEMPERATURES:

Finishing temperatures should not exceed 150° F.

MOISTURE CONTENT:

The moisture content of dehydrated potato strips, slices or cubes must not exceed 6% when packed ready for shipment.

YIELD:

The yield will be from 15 to 17% based on the weight of the fresh unprepared product.

VITAMIN CONTENT:

When properly prepared, the freshly dried product will contain approximately 425 micrograms of vitamin B₁ (thiamin), 250 micrograms

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of vitamin B₂ (riboflavin), and 25 milligrams of vitamin C (ascorbic acid) per 100 grams. No guarantee of vitamin content of the products should be given.

PRECOOKED POTATOES (RICED):

The chief difference between this and the other types of dehydrated potatoes lies in the fact that this form is precooked before drying. After washing, the tubers are peeled and thoroughly precooked. When soft, they are passed through the ricing device and the strings dropped directly onto the trays. If riced while hot, the strings do not have such a tendency to stick together or to the trays. The strings should not be over 1/8 inch in diameter. Drying is similar to the other forms but is accomplished in a much shorter time.

The moisture content of the finished product must not exceed 7% when packed ready for shipment.

Detailed specifications covering purchases are issued by the Office of the Quartermaster General of the U.S. Army and by the Agricultural Marketing Administration in Washington, D. C.

If further detailed information is desired, inquiries should be addressed to

The Dehydration Committee
Bureau of Agricultural Chemistry and Engineering
U.S. Department of Agriculture
Washington, D.C.

or to

The Dehydration Committee
Bureau of Agricultural Chemistry and Engineering
U.S. Department of Agriculture
800 Buchanan Street
Albany, California.

